CLAIMS

1. (Currently amended) A method for combining at least two adjacent image segments to print a ~~larger~~ composite image on a photosensitive surface, comprising:

defining a buffer region as an area of an image to be printed on the photosensitive surface comprising pixels from a first image segment and pixels from a second image segment;

increasing the width of the first image segment to be printed on the photosensitive surface by adding pixels from the second image segment, wherein the pixels added from the second image segment substantially correspond to the area defined by the buffer region;

printing, with a printing device, the first image segment and the portion of the second image segment added to increase the width of the first image segment onto the photosensitive surface, while modifying the intensity of the pixels printed in the buffer region by ~~a~~ <u>one of an increasing or decreasing</u> first ramp value;

increasing the width of the second image segment to be printed on the photosensitive surface by adding pixels from the first image segment, wherein the pixels added from the first image segment substantially correspond to the area defined by the buffer region;

after printing the first image segment, printing, with the printing device, the second image segment and the portion of the first image segment added to increase the width of the second image segment, onto the ~~the~~ photosensitive surface, while modifying the intensity of the pixels printed in the buffer region by ~~a~~ <u>the other of an increasing or decreasing</u> second ramp value;

whereby the first image segment and the second image segment substantially overlap in the buffer region to form the larger composite image on the photosensitive surface while reducing the visible seam between the first image segment and the second image segment.

2. (Canceled)

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3. (Currently amended) A method according to claim 1 ~~wherein the first ramp value and the second ramp value are opposite one another~~ wherein the ultimate intensity of the pixels printed in the buffer region is substantially the same as the intensity of the pixels printed in the first image segment and the second image segment that are not overlapped in the buffer region.

4. (Previously Presented) A method according to claim 1 wherein the intensity of the pixels printed in the buffer region sums to substantially full scale.

5. (Canceled)

6. (Previously Presented) A method according to claim 1 wherein the intensity of the pixels printed in the buffer region is modified by modulating the amplitude of a beam of electromagnetic radiation capable of exposing the photosensitive surface.

7. (Previously Presented) A method according to claim 6 wherein the intensity of the pixels printed in the buffer region is modified by modulating the amplitude of a beam of light.

8. (Previously Presented) A method according to claim 6 wherein the intensity of the pixels printed in the buffer region is modified by modulating the amplitude of a laser beam.

Claims 9-11: (Canceled)

12. (Previously presented) A method according to claim 8 wherein the amplitude of the laser beam is modified by an Acousto-Optic Modulator.

13. (Previously presented) A method according to claim 1 wherein the printing of the first and second image segments is achieved by scanning the photosensitive surface with a

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rotating polygon scanner, a rotating single facet mirror scanner or a rotating holographic scanner illuminated by the exposing radiation source.

14. (Previously presented) A method according to claim 1 wherein the printing of the first and second image segments is achieved by exposing the photosensitive surface using a fixed pattern array of individually segmented light sources.

15. (Original) A method according to claim 14 wherein the printing of the first and second image segments uses a laser beam.

16. (Original) A method according to claim 14 wherein the printing of the first and second image segments uses light valves illuminated by a light source.

17. (Original) A method according to claim 14 wherein the printing of the first and second image segments uses micromirrors illuminated by a light source.

18. (Previously presented) A method according to claim 1 wherein the printing of the first and second image segments is achieved by exposing the photosensitive surface using a fixed pattern array of radiation sources.

Claims 19-21: (Canceled)

22. (Currently amended) A printing system capable of creating a ~~larger~~ composite image comprising at least two adjacent image segments on a photosensitive surface, comprising:

a pixel counter for counting a number of exposed pixels;

an integrator which outputs an intensity value ~~in~~ <u>for pixels of</u> a buffer region according to an initial value for the intensity value and a ramp rate that defines a change in the intensity value from the initial value, wherein the buffer region comprises an area of an image to be printed on the photosensitive surface comprising pixels from a first image

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segment and an adjacent second image segment;

a multiplier which converts digital pixel data and the intensity value into analog data;

an intensity modulator which modulates electromagnetic radiation in accordance with the analog data; and

a printing device which prints the first image segment defined by the electromagnetic radiation onto a first area of the photosensitive surface and, after indexing at least one of the printing device and the photosensitive surface relative to one another, prints the second image segment defined by the electromagnetic radiation onto a second area of the photosensitive surface, wherein the pixels printed in the first image segment and the pixels printed in the second image segment overlap in the buffer region, and wherein the intensity of the pixels printed in the buffer region is modulated in one of an increasing and decreasing value.

23. (Original) A printing system according to claim 22 wherein the intensity modulator is an amplitude modulator.

24. (Original) A printing system according to claim 23 wherein the amplitude modulator is an Acousto-Optic Modulator (AOM).

Claims 25-27: (Canceled)

28. (Currently amended) A printing system capable of creating a ~~larger~~ composite image comprising at least two adjacent image segments on a photosensitive surface, comprising:

means for counting a number of exposed pixels;

means for computing an intensity value ~~in~~ for pixels of a buffer region according to an initial value for the intensity value and a ramp rate that defines a change in the intensity value from the initial value, wherein the buffer region comprises an area of an image to be

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printed on the photosensitive surface comprising pixels from a first image segment and an adjacent second image segment;

means for converting the intensity value and digital pixel data into analog data;

means for modulating intensity of electromagnetic radiation in accordance with the analog data; and

printing means for printing the first image segment, including the buffer region, defined by the electromagnetic radiation onto the first area of a photosensitive surface and, after indexing at least one of the printing device and the photosensitive surface relative to one another, printing the second image segment, including the buffer region, defined by the electromagnetic radiation onto a second area of the photosensitive surface, wherein the intensity of the pixels printed in the buffer region is modulated in one of an increasing and decreasing value.

29. (Original) A printing system according to claim 28 wherein the ramp rate is defined as the percentage of modulation per in-scan pixel.

30. (Original) A printing system according to claim 28 wherein the intensity value is computed from a ramp rate and an initial value by an integrator.

31. (Original) A printing system according to claim 28 wherein the intensity value and digital pixel data are converted into analog data by a multiplier.

32. (Original) A printing system according to claim 28 wherein a means for modulating intensity is amplitude modulation.

33. (Original) A printing system according to claim 32 wherein the amplitude modulation is accomplished by an Acousto-Optic Modulator.

34. (Original) A printing system according to claim 28 wherein the means for modulating intensity is phase modulation.

35. (Original) A printing system according to claim 28 wherein the means for modulating intensity is frequency modulation.

36. (Original) A printing system according to claim 28 wherein the means for modulating intensity is code domain modulation.

37. (Previously presented) A method according to claim 1 wherein the photosensitive surface is a photosensitive printing plate or a photosensitive printing drum.

38. (Previously Presented) A method according to claim 1, wherein the width of the first image segment and the second image segment to be printed on the photosensitive surface is less than or equal to a maximum scan width of the printing device.

39. (Previously presented) A printing system according to claim 22, wherein the printing device is a raster output scanner.

40. (Previously presented) A printing system according to claim 28, wherein the printing device is a raster output scanner.

41. (Previously Presented) A method of printing a composite image onto a photosensitive surface, wherein the composite image is formed from a first image segment and a second image segment wherein (i) the first image segment comprises a first image segment region, a first first buffer region and a second first buffer region and (ii) the second image segment comprises a second image segment region, a first second buffer region and a second second buffer region and wherein the first image segment is comprised of first image segment pixels and the second image segment is comprised of second image segment pixels, wherein the method comprises the steps of:

printing, with a printing device, the first image segment region, the first first buffer region and the second first buffer region, wherein the first image segment region is formed

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of first image segment pixels and the first first buffer region and the second first buffer region are formed of pixels of both the first and second image segments and wherein the intensity of the pixels of both the first and second image segments in the first first buffer region and second first buffer region are ramped in intensity in one of an increasing and decreasing value;

after printing the first image segment, printing, with the printing device, the second image segment region, the first second buffer region and the second second buffer region, wherein the first second buffer region overlaps the first first buffer region and the second second buffer region overlaps the second first buffer region, and wherein the first second buffer region and the second second buffer region are formed of pixels of both the first and second image segments and wherein the intensity of the pixels of both the first and second image segments in the first second buffer region and the second second buffer region are ramped in intensity in the other of the increasing and decreasing value;

whereby the first image segment and the second image segment overlap in the buffer regions to form the composite image on the photosensitive surface while reducing the visible seam between the first image segment and the second image segment.

42. (Previously Presented) The method as claimed in claim 41, wherein prior to printing the first image segment, the method comprises the step of:

in a digital database, increasing the width of the first image segment, which includes the first first buffer region, by the width of the second first buffer region by adding pixels from the second image segment; and

prior to printing the second image segment, the method comprises the step of:

in the digital database, increasing the width of the second image segment, which includes the second second buffer region, by the width of the first second buffer region by adding pixels from the first image segment.

43. (Previously Presented) The method as claimed in claim 42, wherein the first first buffer region and the second first buffer region define a first buffer and the first second

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buffer region and the second second buffer region define a second buffer, wherein the first buffer and second buffer are created by the steps of:

defining a first rate at which the intensity of the pixels printed in the first buffer and second buffer will be attenuated during printing of the first image segment; and

defining a second rate at which the intensity of the pixels printed in the first buffer and second buffer will be attenuated during printing of the second image segment.

44. (Previously Presented) The method as claimed in claim in claim 43, wherein the first rate and the second rate at which the intensity of the pixels are attenuated are opposite one another, wherein the ultimate intensity of the pixels printed in the buffer regions is substantially the same as the intensity of the pixels printed in the first image segment region and the second image segment region, whereby a composite image, formed on the photosensitive substrate, has a reduced visible seam between the first image segment and the second image segment.

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